Table 1: Catalyst physical properties as a function of calcination temperature

Sample	Calc.temp °C	Area m^2/g	Pore vol cc/g	% fines<22µm after JI
Pilot Plant catalyst	uncalc	288	0.03	11.6
	300	286	0.64	2.8
	400	262	0.63	3.7
	500	243	0.60	2.1
Commercial catalyst	uncalc	293	0.62	11.4
	300	267	0.61	1.1
	400	247	0.67	1.6
	500	225	0.60	1.9
Pilot Plant Rotary Kiln				
Commercial catalyst	uncalc	289	0.60	12.2
	385	241	0.54	5.8

Table 2: Behaviour after repeated jet impingement

	Increase in % fines< 22µm	
	Uncalcined	Calcined at 300°C
Before Jet Impingement	0	0
After Jet Impingement 1	11.6	2.8
After Jet Impingement 2	29.4	18.5
After Jet Impingement 3	22.4	19.5

Table 3: Mössbauer spectroscopic parameters

	Uncalcined sample	**Calcined sample**
Hyperfine field (H) (T)	517.6	515.3
	496.9	495.3
	473.8	472.6
	444.4	442.5
Isomer shift (δ_1) ($mm.s^{-1}$)	0.757	0.761
	0.744	0.742
	0.717	0.711
	0.678	0.669
Quadropole splitting (ΔE_Q) ($mm.s^{-1}$)	0.010	0.009
	0.018	0.013
	0.024	0.026
	0.021	0.024

Table 4: On line quantification of catalyst fines

	Volume(%<)	
Particle diameter (μm)	**Uncalcined catalyst**	**Calcined catalyst**
22	10.1	0.28
11	5.6	0.16
4	1.9	0.02

Table 5: Mechanical strength of dried samples

Sample	**% Moisture**	**% fines <22μm after J1**
Standard	2.7	9.7
Dried	1.0	7.0
Calcined	1.3	1.5

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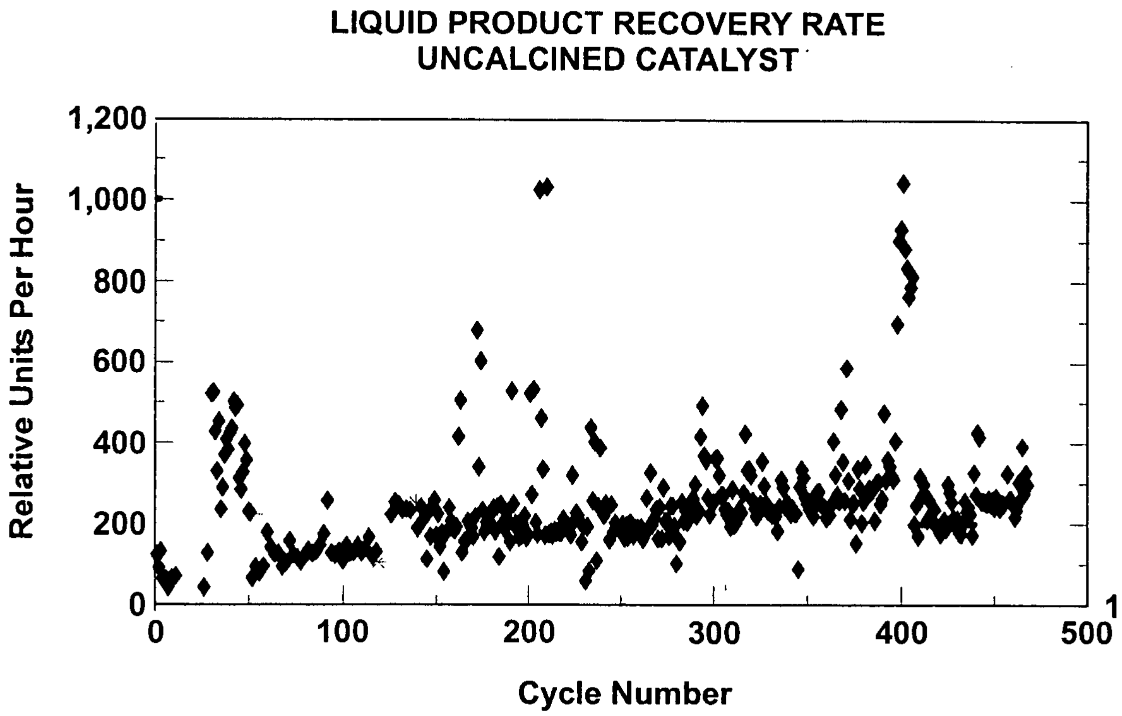
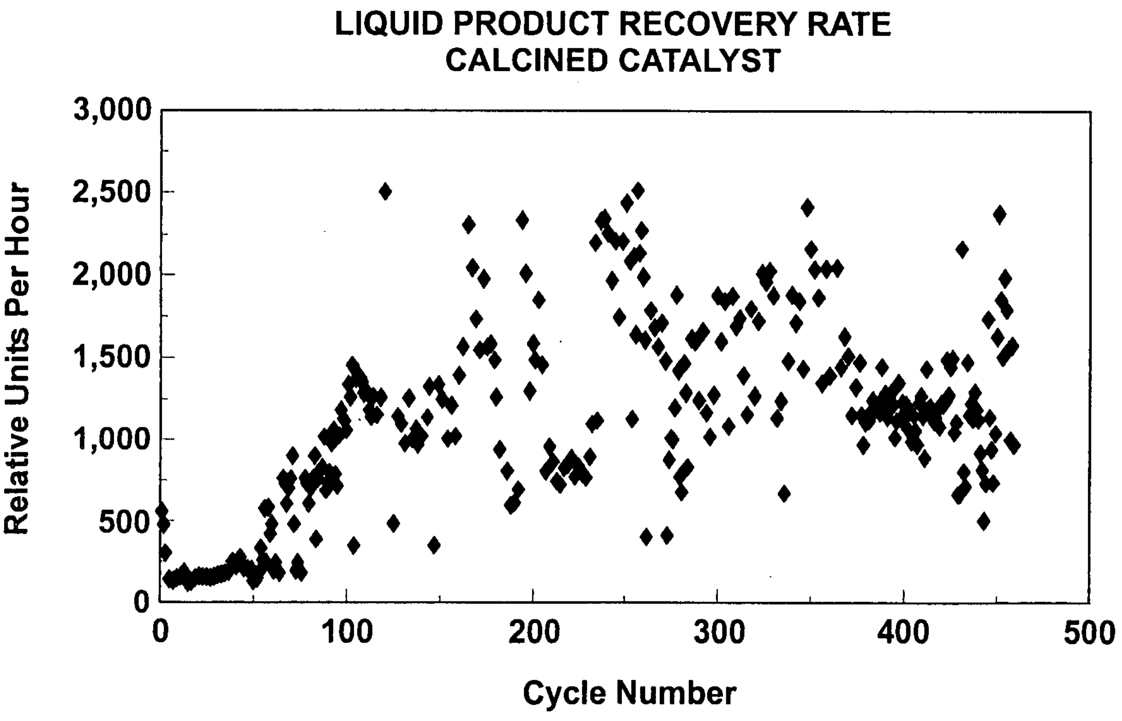
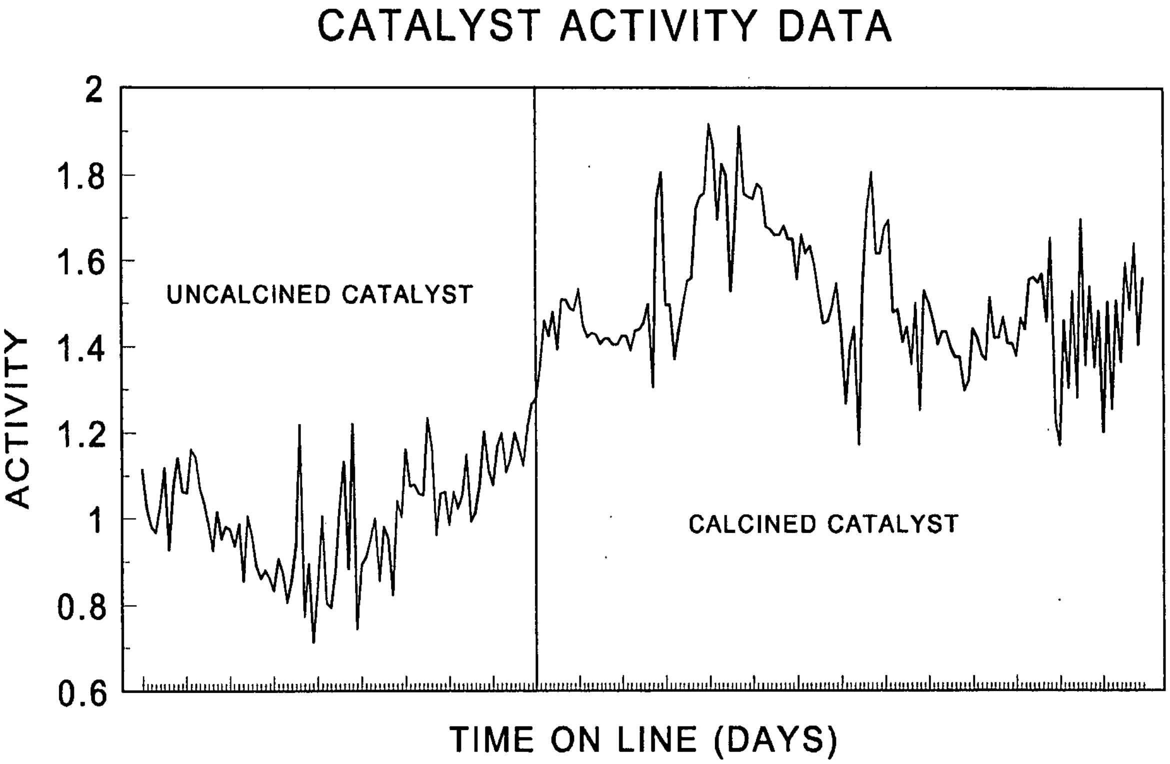
Graph 1: Solid separation performance of uncalcined catalyst



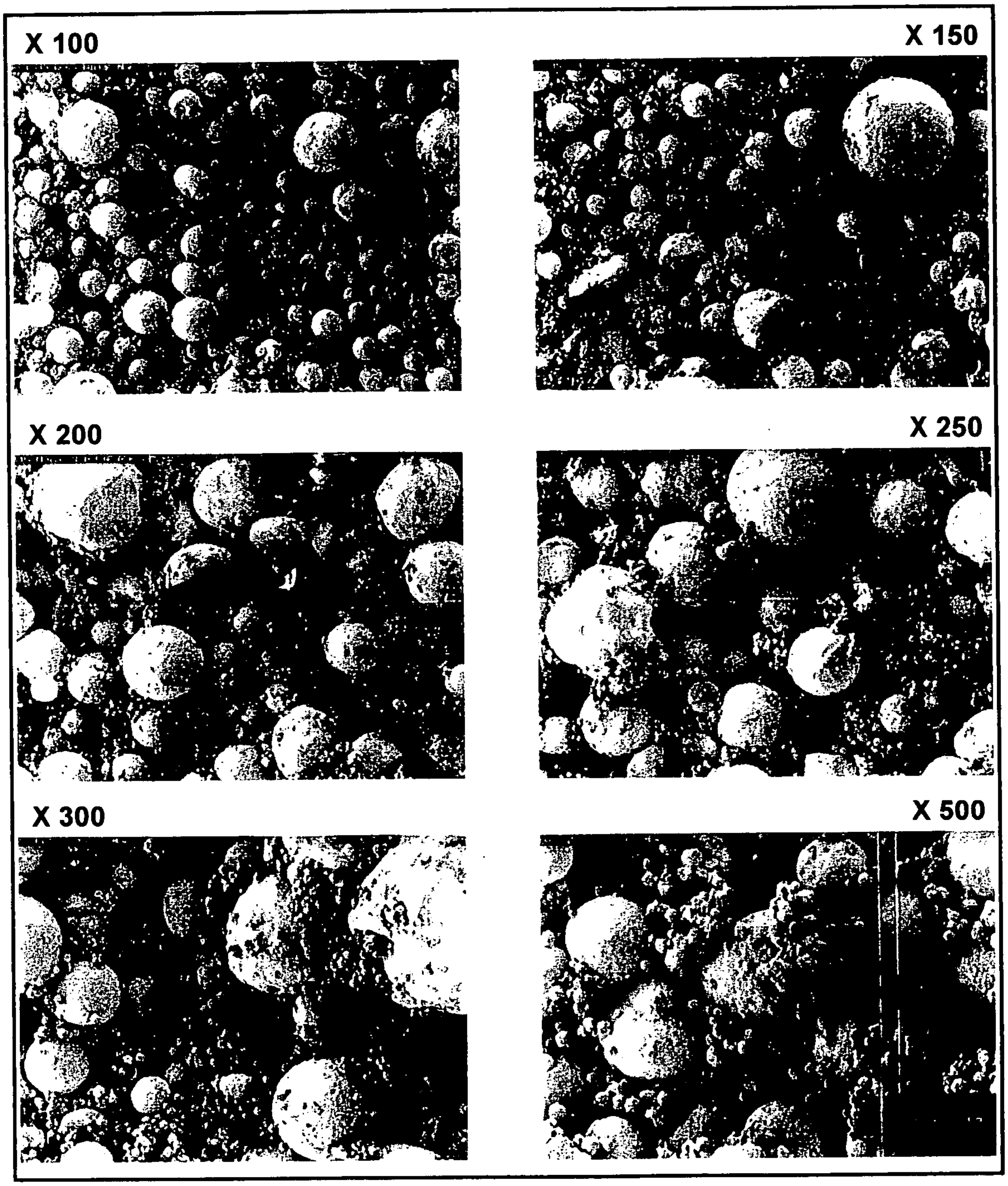
Graph 2: Solid separation performance of calcined catalyst



Graph 3: Increase in catalyst activity after addition of calcined catalyst



Micrograph 1: On line uncalcined catalyst particles



Micrograph 2: On line calcined catalyst particles